

Applicant : Peter M. Willis  
Serial No. : 10/791,456  
Page : 7

REMARKS

In the Office Action, the Examiner rejected the independent claims 1, 5, 8, and 15 remaining in this application under 35 U.S.C. § 103 on the combination of Nakano et al. (2005/0266685) in view of Seymour (4,565,598). By this Amendment, Applicant has amended these claims to more clearly define the environment of Applicant's invention, which is a combustion furnace for an analyzer as well as the geometry of the furnace which allows the accurate and relatively quick analysis of multiple samples in sample-holding crucibles on a platter. The Nakano patent addresses a semiconductor crystal growing device utilizing multiple heaters and multiple heating zones and relies upon power ratios for the control of the crystal grow which requires multiple temperature sensors. Nakano does not disclose or suggest a combustion furnace with a disk-shaped body having a resistance heating element or a crucible-holding platter with apertures for holding crucibles containing samples for an analysis nor does it model the temperature reaction of the furnace utilizing a temperature sensor positioned within a crucible.

The secondary reference to Seymour likewise is not a combustion furnace for the analysis of multiple samples in crucibles positioned on a platter and again does not model temperature at all but rather only provides real time measurements looking at the profiling of crystal growth rate. Neither the Nakano nor Seymour references remotely suggest either the geometry of Applicant's combustion furnace as defined by amended independent claims 1, 5, 8, and 15 nor do they, as defined in Claim 8, include a balance with a weight platform and the rotatable support

Applicant : Peter M. Willis  
Serial No. : 10/791,456  
Page : 8

for sequentially positioning crucibles on the weight platform in combination with the temperature modeling.

The requirements for making a *prima facie* case of obviousness are described in MPEP § 2143 as follows:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claims limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488,20 USPQ2d 1438 (Fed. Cir. 1991).

MPEP § 2143.01 provides further guidance as to what is necessary in showing that there was motivation known in the prior art to modify a reference teaching. Specifically, MPEP § 2143.01 states under the heading "Fact That Reference Can Be Combined or Modified is not Sufficient to Establish *Prima Facie* Obviousness":

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

and under the heading "Fact That the Claimed Invention is Within the Capabilities of One of Ordinary Skill in the Art is not Sufficient by Itself to Establish *Prima Facie* Obviousness":

A statement that modifications of the prior art to meet the claimed invention would have been 'well within the ordinary skill of the art' at the time the claimed invention was made,' because the references relied upon teach all aspects of the claimed invention were individually known in the prior art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to

Applicant : Peter M. Willis  
Serial No. : 10/791,456  
Page : 9

combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993).

Some of the remaining dependent claims were further rejected on the combination of the two primary references together with Shah et al. (5,517,594). In view of the comments above, however, with respect to the amended independent claims 1, 5, 8, and 15, it is submitted that the wafer manufacturing reactor of the Shah reference, which employs separate controllers, does not suggest the geometry of the combustion furnace defined by these dependent claims nor the operation of Applicant's furnace as defined by such claims.

Accordingly, by this Amendment, it is submitted that claims 1-11 and 15-18, as amended, define patentable subject matter and are in condition for allowance, which action is respectfully solicited.

Respectfully submitted,

PETER M. WILLIS

By: Price, Heneveld, Cooper,  
DeWitt & Litton, LLP



H. W. Reick  
Registration No. 25 438  
695 Kenmoor S.E.  
P.O. Box 2567  
Grand Rapids, MI 49501  
Phone: (616) 949-9610  
Facsimile: (616) 957-8196

April 9, 2007

Date

HWR:dal